M·O·E
TRAINING PROGRAM

CALENDAR
April 1, 1990 to March 31, 1991

HUMAN RESOURCES BRANCH

Ontario Environment
Environnement
Jim Bradley, Minister/ministre

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ENVIRONMENTAL TRAINING FOR THOSE OUTSIDE THE ONTARIO PUBLIC SERVICE

The Ministry of the Environment has a long standing committment to the development of training to support the environmental protection programs in the municipal sector of Ontario. Historically, most of this training has been done at the Brampton Training Centre co-ordinated by Ministry of the Environment staff. More recently, the demand for this training has grown beyond the delivery capacity of the Brampton Training Centre. To increase capacity an arrangement has been made with several Community Colleges to offer some of the same training courses on our behalf throughout Ontario. This will enable the staff at Brampton to develop new and improved training curricula while at the same time expand the availability of our training to meet the needs of the municipalities and professional groups which service them.

NOMINATION PROCEDURE

Applications from non-government employees (i.e. municipalities or private companies) must submit a letter along with the registration fee, payable by cheque or money order to the Treasurer of Ontario.

The following information must be included in letters of application from non-government personnel.

a) Course name, number and date. An acceptable alternate, if available, should be shown.
b) Full name of applicant and home address.
c) Job title, address of employment and department or office.

SELECTION POLICY

All registrants will be reviewed and candidates will be selected to attend a course based on the priorities of the Ministry of the Environment and reflecting its corporate objectives. Date of application will be only one of several factors considered.

REGISTRATION FEE

The registration fee is designed with the following considerations:

- to assure commitment by managers/supervisors so that training is carried out
- to maximize training opportunities
- to support the development and review of curriculum

The registration fee is non-refundable if the Training Unit is not advised by the cancellation date indicated in the course outline. Full charges will also be applied if the participant fails to attend the course workshop. Should the manager or supervisor nominate a replacement participant, the registration fee will be applied to the replacement's registration.

COURSE CAPACITY

If a course is over-subscribed, selection of candidates will be based on the date applications are received. As soon as possible after receipt, the nominee will be listed for the next alternative course (if applicable), subject to confirmation by the employer and normal selection procedures.

PREREQUISITES

a) Prerequisites are specified for some courses. Employers must ensure that course candidates meet these requirements. If an application is received from a candidate lacking the course prerequisites, it will not be accepted.

b) Certain advanced courses require the Ministry Basic Water or Wastewater Treatment Course or equivalent as a prerequisite. Equivalents to the Ministry Basic Courses include the courses previously offered by the OWRC.

c) Certain courses, because of prerequisites and/or course design are restricted to specific groups.

MEALS

A continental breakfast is provided for participants attending some courses for one or more days. Participants should arrive at least 15 minutes prior to the beginning of the course.

You will be advised at the course/workshop if meals are being provided.

TRAVEL AND ACCOMMODATION

1. Employees of Other Ministries and Non-Government Employees

Travel and accommodation arrangements, including reservations are the responsibility of the participant. Employers must ensure that, on arrival, participants are in possession of sufficient funds to meet anticipated expenses.

PRE-COURSE STUDY

When applicable, pre-course material will be forwarded to each applicant. This will include general course information, a map showing course location and in most cases, reference material for pre-course study.

It is essential that employers encourage applicants to review the study material provided. For certain courses the applicant will be required to submit solutions to problems forwarded with the study material.

COURSE COMPLETIONS FOR TECHNICAL COURSES

The appropriate course descriptions show the minimum average to be attained for successful completion of the course. A candidate's results and a certificate or seal will be forwarded to the employer, who is responsible for informing the individual.

As do many other organizations, such as the WPCF, AWWA and APWA, the Ontario Ministry of the Environment now awards Continuing Education Units (CEUs) to participants who successfully complete certain courses. A permanent record of CEUs awarded to individuals will be maintained by the Training and Certification Section. A participant may request this record to use, if necessary, to meet requirements for:

a) Documentation of continuing qualifications for certification of operational staff of a water or wastewater utility;
b) Evidence of personal and vocational growth and adjustment to meet changing career demands;
c) Demonstration of a conscious effort towards personal development.

CEUs are awarded on the basis that one (1) CEU is equal to ten contact hours of formal instruction in job related training. For example, 2.5 CEUs will be awarded for successful completion of the Activated Sludge Course, since it involves approximately 25 hours of formal instruction excluding the review and examination. The assigned value is shown in the appropriate course descriptions in this publication.

TRAINING MANUALS

Prices quoted for training manuals are subject to change without notice.

1. Ministry of the Environment

Training manuals published by the Ministry are available for purchase from:

Publications Services
Ministry of Government Services
880 Bay Street, 5th Floor
Toronto, Ontario M7A 1N8
Telephone (416) 965-3769

These include:

Basic Sewage Treatment Operation	6.50
Activated Sludge Process	7.00
Primary Treatment and Sludge Digestion	7.00
Basic Water Treatment Operation	7.50
Surface Water Treatment Operation	7.00
Basic Gas Chlorination	6.00
Preventive Maintenance	7.50
Digester Gas System Maintenance	7.00
Water Distribution System Op/Maintenance	7.50
Control of Industrial Waste in Municipalities	7.00
Mathematics for Water & Wastewater Operators	4.00
Confined Space Entry	5.00
Lab Skills for Plant Operators, Vol. 1	7.50
Lab Skills for Plant Operators, Vol. 2	7.50

2. Ontario Municipal Engineers Association

Manuals published by this organization include:

Sewer & Watermain Design Manual	15.00
Sewer & Watermain Design Construction Inspectors Manual	15.00

These are available for purchase by writing to:

Don J. McDonald
MEA Treasurer & Publications Secretary
20 Pitt Street
Cornwall, Ontario K6J 3P2
Telephone (613) 932-1515

3. American Publications

Textbooks provided in the Wastewater Collection and Small Water Supply Systems courses are:

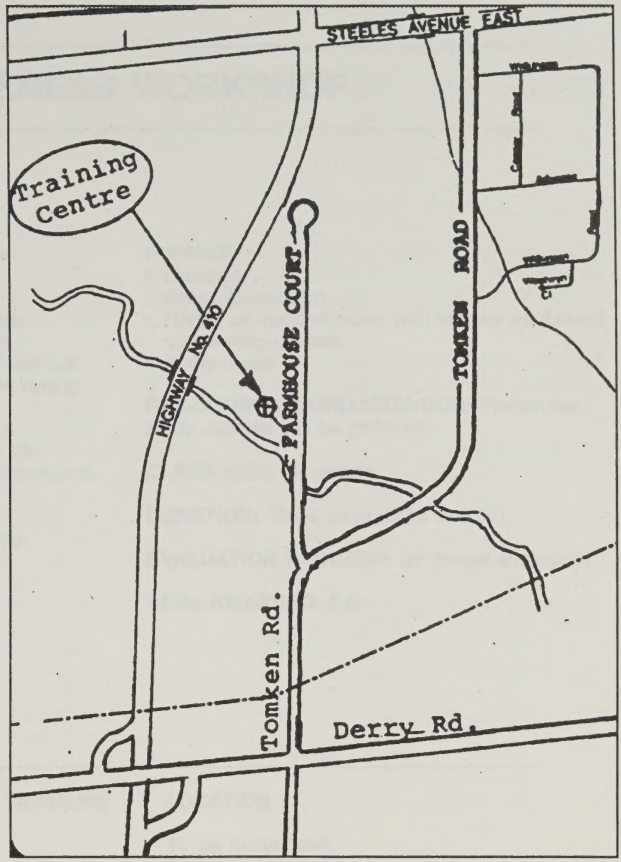
Operation & Maintenance of Wastewater Collection Systems, Vol. 1
Small Water System Operation and Maintenance

These are American publications and prices may vary. They can be ordered from:

Kenneth Kerri
Office of Water Programs
California State University, Sacramento
6000 J. Street
Sacramento, California
U.S.A. 95819--2794

BRAMPTON TRAINING CENTRE

100 FARMHOUSE COURT
BRAMPTON, ONTARIO



Parking if free.

Directions to Brampton:

Starting at the junction of Highway (Hwy) 400 and Hwy 401

- Proceed westbound
- Exit to Hwy 410 northbound to Brampton
- Turn right on Derry Road eastbound
- Proceed eastbound to the first intersection which is Tomken Road
- Turn left on Tomken Road
- Turn left on Farmhouse Court
- 100 Farmhouse Court is on the westside of the road

All courses will commence at 8:15 a.m. (promptly) and finish at 4:30 p.m. unless otherwise indicated in the course descriptions. Registration begins at 8:15 a.m. until 9:00 a.m.

ELECTRICAL AWARENESS WORKSHOP

COURSE NUMBER: OPS001

PURPOSE: To acquaint water/wastewater operators with the hazards of electricity.

TARGET GROUP: Water and Wastewater operations personnel who do not hold an apprentice certification in the electrical trade but who carry out routine maintenance duties during their daily job function.

PREREQUISITES: The candidate must be employed in water or wastewater utility operations and/or maintenance.

SCOPE: The topics to be covered include:
- Fundamentals of electricity
- Code terminology
- Safety practices
- Effects of shock on the body
- First aid for electrical victims
- Electrical lock-out procedures
- Magnetic starters
- Electrical testing devices
- Hands on practice

FORMAT:
- Lectures
- Group Discussion
- Hands on familiarization with various equipment and testing devices
- Audio visual

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided

CLASS SIZE: 15 people

DURATION: Three days (8:30 to 4:30)

EVALUATION PROCESS: No formal evaluation

CEUs AWARDED: 2.0

COURSE DATES	APPLICATION DEADLINE	LOCATION
Apr. 16-20, 1990	Mar. 16, 1990	To be announced.
Nov. 12-16, 1990	Oct. 12, 1990	To be announced.

BASIC WASTEWATER TREATMENT

COURSE NUMBER: OPS100

PURPOSE: To increase participants on-the-job efficiency of wastewater treatment plant operators. It stresses "the need to know" of all processes associated with wastewater treatment.

TARGET GROUP: Operators in training and individuals who want to learn and/or increase their knowledge of wastewater treatment processes.

PREREQUISITES:

i) Employment and desirably 6 months experience in the operation of a wastewater treatment plant.

ii) Grade XII academic standing or equivalent.

SCOPE: Participants will learn basic concepts of:

- Wastewater Characteristics
- Bacteriology/Microbiology
- Primary Treatment
- The Activated Sludge Process
- Sludge Digestion
- Sludge Handling
- Chlorination/Disinfection
- Laboratory Testing
- Sampling/Record Keeping
- Safety

FORMAT:

- Lectures
- Group discussions
- Laboratory Exercises
- Field Trip

PRE-COURSE FAMILIARIZATION:
Pre-course study material will be provided. When preparing to attend this course, an applicant must:

i) Review the Ministry manual, Basic Wastewater Treatment

ii) Complete the exercise in the Ministry manual, Mathematics for Water and Wastewater Operations.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Mar. 26-30, 1990	Mar. 19, 1990	Fanshawe College
Apr. 2-6, 1990	Mar. 19, 1990	Mohawk College
Apr. 9-12, 1990	Apr. 2, 1990	Sault College
Apr. 17-June 5, 1990	Apr. 3, 1990	Seneca College
May 14-18, 1990	May 2, 1990	Loyalist College
June 4-8, 1990	May 21, 1990	Seneca College
Sept. 17-21, 1990	Aug. 17, 1990	Brampton Training Centre
Sept. 4-Oct. 23, 1990	Aug. 21, 1990	Seneca College
Sept. 24-28, 1990	Sept. 10, 1990	Lambton College
Oct. 1-5, 1990	Sept. 17, 1990	Mohawk College
Nov. 26-30, 1990	Oct. 26, 1990	Brampton Training Centre
Nov. 26-30, 1990	Nov. 2, 1990	Loyalist College
Dec. 3-6, 1990	Nov. 26, 1990	Sault College
Mar. 18-22, 1991	Feb. 15, 1990	Brampton Training Centre

MATHEMATICS FOR WATER AND WASTEWATER OPERATIONS

COURSE NUMBER: OPS101

PURPOSE: To ensure that operators have a working understanding of the practical mathematics necessary for the performance of their job.

TARGET GROUP: Water and wastewater operators who feel that they need a refresher course in basic mathematics as preparation for other courses or for certification exams. This course is strongly recommended for those who lack Grade 12 math.

SCOPE:
- Basic concepts of mathematics
- Working with formulas
- Metric conversions
- Pump rate (feed rate) calibrations
- Laboratory/plant solution calculations
- Tank calibrations
- Specific gravity

MATERIALS AVAILABLE:
- Student workbook
- Instructor's workbook
- Mathematics for Water & Wastewater Operations

FORMAT:
- tutorial
- workshop
- home study

PRE-COURSE FAMILIARIZATION:
Candidates should find out what types of calculations are necessary in the operation at their plant and bring this list with them to the course.

CLASS SIZE: 15 people max.

DURATION: Four days (8:30 to 4:30)

EVALUATION PROCESS:

CEUs AWARDED: 2.0

COURSE DATES	APPLICATION DEADLINE	LOCATION
Oct. 8-11, 1990	Sept. 7, 1990	Brampton Training Centre
Jan. 21-24, 1991	Dec. 21, 1990	Brampton Training Centre

BASIC WATER TREATMENT OPERATION

COURSE NUMBER: OPS150

PURPOSE: To increase participant's on-the-job efficiency in water treatment. This is a prerequisite to the Surface Water Treatment Course.

TARGET GROUP: Water treatment plant operators and others who want to know all water treatment processes.

PREREQUISITES:
i) Employment and desirably six months experience in the operation of water treatment plants
ii) Desirably Grade XII academic standing

SCOPE: The participants will have the opportunity to acquire knowledge of the following basic concepts:
- Water Sources
- Physical and chemical characteristics
- Coagulation, flocculation and sedimentation
- Filtration
- Chlorination
- Water Microbiology and Sampling
- Safety
- Records Keeping
- Basic Laboratory Tests

FORMAT:
- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. When preparing to attend this course, an applicant must:
i) Review the Ministry manual, Basic Water Treatment Operation
ii) Complete the exercises in the Ministry manual, Mathematics for Water and Wastewater Operations

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Apr. 23-26, 1990	Apr. 16, 1990	Sault College
Apr. 23-27, 1990	Apr. 6, 1990	Fanshawe College
Apr. 23-28, 1990	Apr. 6, 1990	Mohawk College
Apr. 18-June 6, 1990	Apr. 4, 1990	Seneca College
May 7-11, 1990	May 1, 1990	Loyalist College
May 28 - June 1, 1990	Apr. 27, 1990	Brampton Training Centre
June 11-15, 1990	May 28, 1990	Seneca College
Sept. 24-27, 1990	Sept. 17, 1990	Sault College
Sept. 5-Oct. 24, 1990	Aug. 22, 1990	Seneca College
Oct. 1-5, 1990	Aug. 31, 1990	Brampton Training Centre
Oct. 22-26, 1990	Oct. 8, 1990	Lambton College
Oct. 15-29, 1990	Aug. 31, 1990	Mohawk College
Nov. 19-23, 1990	Nov. 1, 1990	Loyalist College
Jan. 28 - Feb. 1, 1991	Dec. 29, 1990	Brampton Training Centre

BASIC GAS CHLORINATION

COURSE NUMBER: OPS180

PURPOSE: To familiarize the participants with the operation of various types of gas chlorination equipment, as well as to teach safety, maintenance and troubleshooting procedures.

TARGET GROUP: New and/or less experienced operators.

PREREQUISITES: Employment in a water or wastewater treatment plant or as an operator of gas chlorination equipment used in industry or recreational facilities.

SCOPE: Participants will have the opportunity to acquire knowledge of the following basic concepts:
- Chlorination theory
- Components of a gas chlorination installation
- Control systems
- Storage and handling of chlorine gas cylinders
- Safety practices
- Chlorination equipment and components
- Start-up and shut-down procedures
- General maintenance
- Troubleshooting
- Chlorination laboratory tests

FORMAT: "Hands on" participation, lectures, discussions

PRE-COURSE FAMILIARIZATION: Pre-course study material, including the Basic Gas Chlorination manual, will be provided. Participants are encouraged to review the material before attending the course.

CLASS SIZE: 24 people max.

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final written examination
- Overall grade of 70%

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
May 7-11, 1990	Apr. 6, 1990	Brampton Training Centre
Sept. 10-14, 1990	Aug. 10, 1990	Brampton Training Centre
Nov. 5-9, 1990	Oct. 5, 1990	Brampton Training Centre
Jan. 14-18, 1991	Dec. 14, 1990	Brampton Training Centre
Feb. 4-8, 1991	Jan. 4, 1990	Brampton Training Centre
Mar. 4-8, 1991	Feb. 1, 1991	Brampton Training Centre

CONFINED SPACE ENTRY

COURSE NUMBER: OPS185

PURPOSE: To familiarize participants with the safe practices and procedures for entry and the correct operation and maintenance of equipment.

TARGET GROUP: Operations and supervisory personnel.

PREREQUISITES: Desirably, candidates for this workshop should possess a First Aid certificate and be training in Cardio-Pulmonary Resuscitiation. In addition, all candidates should be in good physical condition so as to perform the required hands-on tasks.

SCOPE: Participant will have the opportunity to learn:

- Safety requirements including a review of the occupational health and safety act, associated regulations and MOE safety policy
- Physical and atmospheric hazards of confined spaces
- Protective equipment
- Respiratory protection
- Atmospheric sensing and detection
- Entry procedures
- Emergency and rescue techniques

FORMAT:

- Lectures
- Demonstrations
- Hands-on practice with equipment
- Performing confined space entries

PRE-COURSE FAMILIARIZATION:
Pre-course study material will be provided. Attendees should review the manual, the Occupational Health and Safety Act and Regulations for Industrial Establishments. All candidates should have a copy of the Act and Regulations in their possession prior to attending the workshop. These are available from Publication Services at the address listed on page vii of this brochure.

CLASS SIZE: 18 people

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Demonstrated technical competency to safely enter a confined space.
- Overall grade of 70% required for successful completion of the course.

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
May 28-June 1, 1990	Apr. 30, 1990	Brampton Training Centre
June 4-8, 1990	May 1, 1990	Brampton Training Centre
June 18-21, 1990	June 11, 1990	Sault College
June 18-22, 1990	May 1, 1990	Brampton Training Centre
Sept. 4-7, 1990	Aug. 28, 1990	Seneca College
Sept. 24-28, 1990	Aug. 15, 1990	Brampton Training Centre
Nov. 26-30, 1990	Oct. 15, 1990	Brampton Training Centre
Feb. 4-8, 1991	Jan. 1, 1991	Brampton Training Centre
Mar. 4-8, 1991	Feb. 1, 1991	Brampton Training Centre

ACTIVATED SLUDGE

COURSE NUMBER: OPS200

PURPOSE: To sharpen the operator's knowledge of process control and troubleshooting.

TARGET GROUP: Operators employed as or likely to be promoted to, shift supervisors, operator-in-charge or chief operator of an activated sludge plant.

PREREQUISITES: Successful completion of the Ministry of the Environment Basic Wastewater Treatment Course; or equivalent.

SCOPE: Participants will have the opportunity to learn:

- Activated Sludge Operating Principles and Processes
- Factors Affecting the Process
- Sampling and Flow Measurement
- Monitoring Requirements
- Identification and Solution of Operating Problems
- Phosphorus Removal
- Microscopic Examination
- Laboratory Tests including D.O., pH, BOD, Suspended Solids, Settling Test, Oxygen Uptake
- Activated Sludge Calculations
- Stock Solutions and Chemical Feed Rate Calculations

FORMAT: "Hands on" participation, laboratory exercises, lectures

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. When preparing to attend this workshop an applicant must:

i) Review the Ministry manual on Activated Sludge Process
ii) Complete the exercises in the Ministry manual, Mathematics for Water and Sewage Operators.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
May 14-18, 1990	Apr. 13, 1990	Brampton Training Centre
Oct. 1-5, 1990	Aug. 31, 1990	Brampton Training Centre
Dec. 10-14, 1990	Nov. 9, 1990	Brampton Training Centre
Mar. 11-15, 1991	Feb. 8, 1991	Brampton Training Centre

WASTEWATER SLUDGE TECHNOLOGY

COURSE NUMBER: OPS210

PURPOSE: To provide participants with the knowledge of current technologies of sludge management used in the overall wastewater treatment process.

TARGET GROUP: Operators employed as shift supervisors, operator-in-charge or chief operators and other individuals who wish to increase their knowledge of physical, chemical and biological sludge handling processes.

PREREQUISITES: Successful completion of the Ministry Basic Wastewater Treatment Course of equivalent.

SCOPE: Participants will have the opportunity to learn:

- Sewage and Sludge Characteristics
- Sludge Conditioning
- Sludge Digestion
- Digester Gas Systems
- Dewatering
- Laboratory analysis
- Sludge Utilization
- Incineration
- Landfarming and Landfilling
- Equipment Maintenance

FORMAT: "Hands on" participation, laboratory exercises, lectures, mathematics exercises

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. When preparing to attend this workshop, the applicant must:

i) Review the course training manual
ii) Complete the exercises in the Ministry manual Mathematics for Water and Sewage Operators.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Feb. 25 - Mar 1, 1991	Jan. 25, 1991	Brampton Training Centre

DIGESTER GAS SYSTEMS OP/MAINTENANCE

COURSE NUMBER: OPS215

PURPOSE: To upgrade the participants knowledge and skills of operating and maintaining the gas system in a wastewater treatment plant.

TARGET GROUP: Individuals who, are responsible for or want to increase their knowledge of operating and maintaining the gas system in a wastewater treatment plant.

PREREQUISITES: The applicant must be employed in the maintenance of the gas system in a wastewater treatment plant. Desirably the applicant should have completed the MOE Wastewater Sludge Technology and have training in the procedures for safe entry into confined spaces.

SCOPE: Participants will have the opportunity to learn the requirements of the Energy Act 1971 and related Regulations with regard to:

- Digestion Process and Gas Production
- Digester Gas System Components
- Gas Piping
- Fuels and Combustion
- Safety
- Fuels Safety Regulations and Codes

FORMAT:

- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: When preparing to attend this course, applicants should familiarize themselves with digester operations, and review the Energy Act 1971, related Regulations and the Installation codes for Natural Gas (CAN 1-B-149.1-M80), Propane (CGA 149.2-1976) and Oil Burning Equipment (CSA Standard B 139-71).

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course.

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Sept. 24-28, 1990	Aug. 24, 1990	Brampton Training Centre

OPERATION & MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS

COURSE NUMBER: OPS220

PURPOSE: To increase the participant's on-the-job efficiency in operating and maintaining a collection system and correcting malfunctions of equipment.

TARGET GROUP: Individuals who are directly involved in Collection Systems, Maintenance and repair.

PREREQUISITES:
i) Employment in the operation and/or maintenance of a wastewater collection system
ii) Desirably Grade XII academic standing

SCOPE: Participants will have the opportunity to learn the basic principles of:
- Design Parameters
- Excavation backfill restoration
- Lift Stations
- Planning for Emergency Services
- TV Inspection and Testing underground
- Cleaning, Maintenance and Repair
- Records and Organization
- Trenching safety adminstration and records safe procedures

FORMAT:
- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: An applicant must review the reference notes on Operation and Maintenance of Wastewater Collection systems.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Apr. 23-27, 1990	May 23, 1990	Brampton Training Centre
Sept. 10-14, 1990	Aug. 10, 1990	Brampton Training Centre
Jan. 14-18, 1991	Dec. 14, 1990	Brampton Training Centre

DIGESTER GAS SYSTEMS OP/MAINTENANCE

COURSE NUMBER: OPS215

PURPOSE: To upgrade the participants knowledge and skills of operating and maintaining the gas system in a wastewater treatment plant.

TARGET GROUP: Individuals who, are responsible for or want to increase their knowledge of operating and maintaining the gas system in a wastewater treatment plant.

PREREQUISITES: The applicant must be employed in the maintenance of the gas system in a wastewater treatment plant. Desirably the applicant should have completed the MOE Wastewater Sludge Technology and have training in the procedures for safe entry into confined spaces.

SCOPE: Participants will have the opportunity to learn the requirements of the Energy Act 1971 and related Regulations with regard to:
- Digestion Process and Gas Production
- Digester Gas System Components
- Gas Piping
- Fuels and Combustion
- Safety
- Fuels Safety Regulations and Codes

FORMAT:
- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: When preparing to attend this course, applicants should familiarize themselves with digester operations, and review the Energy Act 1971, related Regulations and the Installation codes for Natural Gas (CAN 1-B-149.1-M80), Propane (CGA 149.2-1976) and Oil Burning Equipment (CSA Standard B 139-71).

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course.

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Sept. 24-28, 1990	Aug. 24, 1990	Brampton Training Centre

OPERATION & MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS

COURSE NUMBER: OPS220

PURPOSE: To increase the participant's on-the-job efficiency in operating and maintaining a collection system and correcting malfunctions of equipment.

TARGET GROUP: Individuals who are directly involved in Collection Systems, Maintenance and repair.

PREREQUISITES:
i) Employment in the operation and/or maintenance of a wastewater collection system
ii) Desirably Grade XII academic standing

SCOPE: Participants will have the opportunity to learn the basic principles of:
- Design Parameters
- Excavation backfill restoration
- Lift Stations
- Planning for Emergency Services
- TV Inspection and Testing underground
- Cleaning, Maintenance and Repair
- Records and Organization
- Trenching safety adminstration and records safe procedures

FORMAT:
- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: An applicant must review the reference notes on Operation and Maintenance of Wastewater Collection systems.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Apr. 23-27, 1990	May 23, 1990	Brampton Training Centre
Sept. 10-14, 1990	Aug. 10, 1990	Brampton Training Centre
Jan. 14-18, 1991	Dec. 14, 1990	Brampton Training Centre

OPERATION AND MAINTENANCE OF WASTEWATER PUMP STATIONS

COURSE NUMBER: OPS221

PURPOSE: To increase participant's on-the-job efficiency in operating and maintaining lift stations and related equipment.

TARGET GROUP: Entry level operations staff and others who wish to build on previous learning.

PREREQUISITES:
i) Employed in the operation and/or maintenance of a wastewater lift station
ii) Desirably Grade XII academic standing

SCOPE: Participants will have the opportunity to acquire:
- Sewage Characteristics
- Safety/Working in Confined Spaces
- Station Control Systems
- Pump and Motor Applications
- Pump Performance
- Station Start-up and Shut-down
- Routine and Preventive Maintenance
- Records and Inspection
- Packing and Mechanical Seals

FORMAT:
- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: An applicant must review pre-course study material.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
May 7-11, 1990	Apr. 6, 1990	Brampton Training Centre
Mar. 11-15, 1991	Feb. 8, 1991	Brampton Training Centre

SURFACE WATER TREATMENT WORKSHOP

COURSE NUMBER: OPS250

PURPOSE: To increase participant's knowledge and skills in water treatment. It is specifically directed to an operator employed as, or likely to be promoted to, shift foreman, operator-in-charge or chief operator of a water treatment plant.

TARGET GROUP: Experienced water treatment plant operators who are employed as, or likely to be promoted to, shift foreman, operator-in-charge or chief operator of a water treatment plant.

PREREQUISITES: Successful completion of the Ministry of the Environment Basic Water Treatment Operation course, or equivalent.

SCOPE: The participants will have the opportunity to learn the concepts of:
- Basic water chemistry
- Microbiological considerations
- Water treatment chemicals
- Coagulation
- Filtration
- Taste and odour control
- Laboratory tests
- Problem solving
- Stock solution preparation
- Dosage calculations and chemical feed rates

FORMAT:
- Lectures
- discussions
- Laboratory exercises

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. When preparing to attend this workshop an applicant must:
- Review the Ministry manual, surface Water Treatment
- Complete the exercises in the Ministry manual, Mathematics for Water and Wastewater Operations.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of course.

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Apr. 23-27, 1990	Mar. 23, 1990	Brampton Training Centre
Apr. 19-June 7, 1990	Apr. 5, 1990	Seneca College
May 7-10, 1990	Apr. 30, 1990	Sault College
May 7-11, 1990	Apr. 27, 1990	Mohawk College
May 28-June 1, 1990	May 11, 1990	Fanshawe College
June 18-22, 1990	June 4, 1990	Seneca College
Sept. 6-Oct. 25, 1990	Aug. 23, 1990	Seneca College
Oct. 1-5, 1990	Sept. 17, 1990	Lambton College
Oct. 29-Nov. 2, 1990	Oct. 1, 1990	Mohawk College
Nov. 5-9, 1990	Oct. 5, 1990	Brampton Training Centre
Nov. 14-22, 1990	Nov. 12, 1990	Sault College
Jan. 14-18, 1991	Dec. 14, 1990	Brampton Training Centre

SMALL WATER SUPPLY SYSTEMS OPERATOR

COURSE NUMBER: OPS255

PURPOSE: To increase participant's edge and skills of operating and maintaining small systems which employ minimum treatment.

TARGET GROUP: Entry level and/or less experienced operators of small water supply systems.

PREREQUISITES:
- Six to twelve months experience in a water supply system
- Desirably Grade XII Academic Standing

SCOPE: The participants will have the opportunity to learn the basic principles of:
- Characteristics of ground water
- Well pumps and maintenance
- Types of valves and maintenance
- Meter maintenance
- Small plant water treatment
- Disinfection
- Safety
- Storage facilities

FORMAT:
- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. Participants are required to review this material prior to the date of the course.

CLASS SIZE: 24 people max.

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final written examination
- Overall grade of 70%

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Available upon request.		Brampton Training Centre

LABORATORY SKILLS FOR PLANT OPERATORS

COURSE NUMBER: OPS260

PURPOSE: To provide participants with the basic skills to carry out in-plant testing and analysis, in either a water or wastewater treatment environment.

TARGET GROUP: Operators and individuals whose responsibility is to carry out in-plant testing and analysis.

PREREQUISITES:
- Two or three years experience in plant operations
- Successful completion of the MOE Basic Wastewater Treatment course and/or Basic Water Treatment Operations course
- Desirably successful completion of the MOE Activated Sludge Course and/or Wastewater Sludge Technology and/or Surface Water Treatment Course, or acceptable equivalents

SCOPE: Participants will have the opportunity to acquire basic knowledge of:
- Laboratory chemical principles
- Laboratory techniques including safety
- Operation of laboratory instruments
- Quality control
- Laboratory testing using:
  - Turbidimeters
  - Spectrophotometers
  - Colour Comparators
  - Amperometric Titrators
  - Microscope
  - Various Lab Glassware
  - Jar Testers
  - D.O. Meters
  - Analytical Balance
  - Bacti Test Procedures:
    - MF Unit
    - P/A Test

FORMAT:
- Laboratory exercises
- Lectures
- Demonstrations

PRE-COURSE FAMILIARIZATION:
Pre-course study material will be provided. Applicants must ensure that they are knowledgeable in water and wastewater treatment processes.

CLASS SIZE: 15 people max.

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final written examination
- Demonstrated ability to carry out laboratory tests
- Overall grade of 70% in the written examination required for successful completion of course.

CEUs AWARDED:

COURSE DATES	APPLICATION DEADLINE	LOCATION
Sept. 24-28, 1990	Aug. 24, 1990	Brampton Training Centre
Nov. 19-23, 1990	Oct. 19, 1990	Brampton Training Centre
Feb. 11-15, 1991	Jan. 11, 1991	Brampton Training Centre

INSTRUMENTATION IN PROCESS CONTROL

COURSE NUMBER: OPS265

PURPOSE: To increase the knowledge of participants in the application of instrumentation in water supply and wastewater treatment facilities through identification and description of various process control loops, why they are needed, typical methods of control including the types of instruments used in water and wastewater process control systems.

TARGET GROUP: Operators and plant maintenance staff.

PREREQUISITES: The applicant should have a good working knowledge of water and/or wastewater utility operation, and;

- Two or three years experience in utility operations
- Successful completion of MOE course in:
  - Basic Wastewater Treatment, or Basic Water Treatment Operations
  - Preventive Maintenance Course
  - Or Acceptable Equivalents

SCOPE: Participants will have the opportunity to acquire basic knowledge on:

- Process variables, manual and automatic control
- Modes of control
- Control function
- Factors of process control
- Feedback control loops
- Sensing devices, temperature, pressure level
- Transmitters and final control elements
- Control modes - two position and proportional control
- Flow measurement
- Preventive maintenance
- Process operation by computer

FORMAT:

- Demonstrations
- Disucssions
- Field trip to a wastewater treatment plant

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. Attendees should familiarize themselves with the process control instrumentation of the utility at which they work.

CLASS SIZE: 24 people max.

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70%

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Oct. 15-19, 1990	Sept. 14, 1990	Brampton Training Centre
Feb. 18-22, 1991	Jan. 18, 1991	Brampton Training Centre

OPERATION AND MAINTENANCE OF WATER DISTRIBUTION SYSTEMS

COURSE NUMBER: OPS270

PURPOSE: To increase participant's on-the-job efficiency in operating and maintaining water distribution systems, correcting malfunctions of equipment and performing quality control tests.

TARGET GROUP: New operations staff whose responsibility is to operate, maintain and correct equipment malfunctions.

PREREQUISITES:
i) Employed in operating and/or maintaining a water distribution system
ii) Desirably Grade XII academic standing

SCOPE: The participants will have the opportunity to acquire:
- Water sources and treatment
- Factors in planning and design
- Water quality objectives
- Watermain pipes, and joints
- Appurtenances
- Hydraulics
- Leak detection, repair, thawing, restoration
- Cleaning, flushing, disinfection, cross connections
- Reports and records, public relations
- Safety
- Corrosion

FORMAT:
- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: The applicant must review pre-course study material including the Ministry manual, Operation and Maintenance of Water Distribution Systems.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Oct. 15-19, 1990	Sept. 14, 1990	Brampton Training Centre
Jan. 21-25, 1991	Dec. 21, 1990	Brampton Training Centre
Mar. 18-22, 1991	Feb. 15, 1991	Brampton Training Centre

INSTRUMENTATION IN PROCESS CONTROL

COURSE NUMBER: OPS265

PURPOSE: To increase the knowledge of participants in the application of instrumentation in water supply and wastewater treatment facilities through identification and description of various process control loops, why they are needed, typical methods of control including the types of instruments used in water and wastewater process control systems.

TARGET GROUP: Operators and plant maintenance staff.

PREREQUISITES: The applicant should have a good working knowledge of water and/or wastewater utility operation, and;

- Two or three years experience in utility operations
- Successful completion of MOE course in:
  - Basic Wastewater Treatment, or Basic Water Treatment Operations
  - Preventive Maintenance Course
  - Or Acceptable Equivalents

SCOPE: Participants will have the opportunity to acquire basic knowledge on:

- Process variables, manual and automatic control
- Modes of control
- Control function
- Factors of process control
- Feedback control loops
- Sensing devices, temperature, pressure level
- Transmitters and final control elements
- Control modes - two position and proportional control
- Flow measurement
- Preventive maintenance
- Process operation by computer

FORMAT:

- Demonstrations
- Disucssions
- Field trip to a wastewater treatment plant

PRE-COURSE FAMILIARIZATION: Pre-course study material will be provided. Attendees should familiarize themselves with the process control instrumentation of the utility at which they work.

CLASS SIZE: 24 people max.

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70%

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Oct. 15-19, 1990	Sept. 14, 1990	Brampton Training Centre
Feb. 18-22, 1991	Jan. 18, 1991	Brampton Training Centre

OPERATION AND MAINTENANCE OF WATER DISTRIBUTION SYSTEMS

COURSE NUMBER: OPS270

PURPOSE: To increase participant's on-the-job efficiency in operating and maintaining water distribution systems, correcting malfunctions of equipment and performing quality control tests.

TARGET GROUP: New operations staff whose responsibility is to operate, maintain and correct equipment malfunctions.

PREREQUISITES:
i) Employed in operating and/or maintaining a water distribution system
ii) Desirably Grade XII academic standing

SCOPE: The participants will have the opportunity to acquire:
- Water sources and treatment
- Factors in planning and design
- Water quality objectives
- Watermain pipes, and joints
- Appurtenances
- Hydraulics
- Leak detection, repair, thawing, restoration
- Cleaning, flushing, disinfection, cross connections
- Reports and records, public relations
- Safety
- Corrosion

FORMAT:
- Lectures
- Discussions

PRE-COURSE FAMILIARIZATION: The applicant must review pre-course study material including the Ministry manual, Operation and Maintenance of Water Distribution Systems.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Oct. 15-19, 1990	Sept. 14, 1990	Brampton Training Centre
Jan. 21-25, 1991	Dec. 21, 1990	Brampton Training Centre
Mar. 18-22, 1991	Feb. 15, 1991	Brampton Training Centre

PREVENTIVE MAINTENANCE

COURSE NUMBER: OPS280

PURPOSE: To increase the knowledge and on-the-job efficiency of participants in maintaining water and wastewater plant equipment in order to achieve and sustain efficient operations.

TARGET GROUP: Operators or maintenance personnel whose responsibility is to maintain water and wastewater plant equipment.

PREREQUISITES: The candidate must be employed in water or wastewater treatment utility operations and/or maintenance.

SCOPE: Participants will have the opportunity to acquire and increase knowledge in:
- Types of pumps
- Drawings and equipment manuals
- Maintenance of piping and valves
- Lubrication
- Bearings
- Characteristics of material pumped
- Pump system characteristics
- Packing and mechanical seals
- Pump troubleshooting
- Maintenance of standby power units
- Electric motors

FORMAT:
- Lectures
- Hands on participation
- discussions
- Demonstrations

PRE-COURSE FAMILIARIZATION: Pre-course study material, including the Preventive Maintenance Course manual, will be provided

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Oct. 29 - Nov. 2, 1990	Sept. 28, 1990	Brampton Training Centre
Dec. 10-14, 1990	Nov. 9, 1990	Brampton Training Centre
Feb. 18-22, 1991	Jan. 18, 1991	Brampton Training Centre

VIBRATION ANALYSIS

COURSE NUMBER: OPS285

PURPOSE: To help participants to be able to take meaningful vibration measurements. By having all personnel take and record measurements in the same manner, the readings are most accurate and give a better indication of equipment problems.

TARGET GROUP: Operation and maintenance staff including maintenance supervisors.

PREREQUISITES: Participants should have had training in the nomenclature and uses of basic hand tools and precision measuring instruments. Participants should have had hands on experience in mechanical drives, couplings, alignment, bearings and lubrications or their equivalent.

SCOPE: Participants will learn:
- How to use a hand-held meter to take vibration readings from rotating equipment and how to record those readings
- How to use a vibration analyzer
- How to take amplitude and frequency measurements and how to record those measurements.
- The basic steps used to balance rotating equipment will also be taught
- Tour a facility to give the participants an actual site situation

FORMAT:
- Lectures
- Hands on use of equipment in the classroom and on site

PRE-COURSE FAMILIARIZATION:

CLASS SIZE: 20 people max.

DURATION: 3 days (8:15 to 4:30)

EVALUATION PROCESS: The participants will be expected to demonstrate knowledge by successfully completing a final test by using facility and manufactures procedures to take vibration measurements effectively and to balance rotating equipment.

CEUs AWARDED: 2.0

COURSE DATES	APPLICATION DEADLINE	LOCATION
Nov. 12-16, 1990	Oct. 1, 1990	Brampton Training Centre

CONTROL OF LIQUID INDUSTRIAL WASTE

COURSE NUMBER: OPS300

PURPOSE: To provide participants with knowledge and solutions to problems which result from industrial waste discharges into a storm sewer, a wastewater collection system or a wastewater treatment plant.

TARGET GROUP: Individuals who are responsible for the enforcement of a Sewer Use By-Law

PREREQUISITES: Those attending should have a good knowledge of wastewater treatment operations and have some responsibility for the functions dealt with on the course.

SCOPE: Participants will have the opportunity to learn and acquire the fundamentals of:

- Characteristics, problems and general treatment
- Methods of selected liquid industrial wastes
- Flow measurement and sampling
- Surveys and inspections
- Affects of industrial wastes on municipal sewage works
- Regulations for haulage and disposal
- Safety
- Municipal control program - Sewer Use By-Laws

FORMAT:

- Lectures
- Case studies
- Discussions

PRE-COURSE FAMILIARIZATION: Pre-course study material, including a manual, will be provided. When preparing to attend, applicants should familiarize themselves with all aspects of the responsibilities of their organizations for the control of liquid industrial wastes, the Water Resources Act and the municipal Sewer Use By-Law.

CLASS SIZE: 24 people max.

DURATION: 5 days (8:15 to 4:30)

EVALUATION PROCESS: n/a

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
May 14-18, 1990	Course closed, in future superceeded by BYE100, BYE101 and BYE102	

ALGAE IDENTIFICATION AND ENUMERATION FOR SURFACE WATER TREATMENT PLANT PERSONNEL

COURSE NUMBER: OPS350

PURPOSE: To train surface treatment plant personnel in the identification of algae in order to avoid treatment problems.

TARGET GROUP: Surface water treatment plant personnel, preferably with laboratory experience.

PREREQUISITE: Basic Water Treatment. Trainees are required to bring with them 1 litre samples of: raw water, and backwash water or microstrainer wastewater.

SCOPE: Students will be trained in:
- Techniques of sampling raw water for algae
- The use of a microscope
- The identification of major algae groups
- Operating responses

FORMAT:
- Lecture
- Lab exercises
- In-plant sampling

PRE-COURSE FAMILIARIZATION: Read the course manual.

CLASS SIZE: 10 people

DURATION: Four days (8:30 to 4:30)

EVALUATION PROCESS: There will be daily quizzes, a written exam and a laboratory practical test. A grade of 70% overall will be required to complete the course.

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Oct. 9-12, 1990	Sept. 1, 1990	Brampton Training Centre

ENVIRONMENTAL LAW ENFORCEMENT FOR SEWER-USE BY-LAW ENFORCEMENT OFFICERS

COURSE NUMBER: BYE100

PURPOSE: To provide participants with basic skills in Sewer Use By-Law Enforcement, as well as knowledge of relevant legislation.

TARGET GROUP: Municipal Sewer Use By-Law Enforcement Officers.

PREREQUISITES: Attendance is restricted to those persons currently employed by municipalities in a sewer use control program.

SCOPE: Participants will have the opportunity to acquire the basic principles of:

- Evolution of Law in Canada
- Reading the Law
- Model Sewer Use By-Law
- Provincial Offences Act
- Rules of Evidence
- Notetaking
- Interviewing
- Due Diligence Concept
- Investigations
- Court System
- Giving Evidence
- Crown Brief
- OWRA, EPA and Related Legislation

FORMAT:

- Lectures
- Exercises
- Role Play

PRE-COURSE FAMILIARIZATION:
Model Sewer Use By-Law

CLASS SIZE: 24 people max.

DURATION: Two 4-day blocks separated by one to two weeks (8:15 to 4:30)

EVALUATION PROCESS:

- Daily mini tests
- Comprehensive final examination
- Overall grade of 70% is required for successful completion of course

CEUs AWARDED: 4

COURSE DATES	APPLICATION DEADLINE	LOCATION
April 2-5 & 17-20, 1990	Mar. 2, 1990	Central Ontario
Nov. 5-8 & 19-22, 1990	Oct. 5, 1990	Central Ontario
April 2-5 & 15-18, 1991	Mar. 1, 1991	Central Ontario

MONITORING, SAMPLING & INSPECTION FOR SEWER USE BY-LAW ENFORCEMENT OFFICERS

COURSE NUMBER: BYE101

PURPOSE: To provide participants with the necessary skills to:
- understand and enforce the Model Sewer Use By-Law

TARGET GROUP: Municipal Employees

PRE-REQUISITES: Attendance is restricted to those persons employed by municipalities in a Sewer Use Control program.

SCOPE: Participants will have the opportunity to acquire the basic principles of:
- Effects of Industrial Wastes on Sewage Collection Systems, Sewage Works, the Natural Environment and on Human Health and Safety.
- Limits and requirements of the Model Sewer Use By-Law
- Powers and Responsibilities of the enforcement officer
- Sample location selection and sample taking
- Sample handling
- Use of monitoring equipment
- Safety in Sampling
- Industrial Inspections
- Courtroom protocol

FORMAT:
- Lecturers
- Exercises
- Role Play

PRE-COURSE FAMILIARIZATION:
Model Sewer Use By-Law

CLASS SIZE: 24 people max.

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:
- daily mini tests
- comprehensive final examination
- overall grade of 70% is required for successful completion of course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
June 11-15, 1990	May 11, 1990	Northeast Ontario (tentative)
Sept. 24-28, 1990	Aug. 31, 1990	Central Ontario (tentative)
Feb. 11-15, 1991	Jan. 11, 1991	Central Ontario (tentative)

SAMPLING WORKSHOP

COURSE NUMBER: BYE102

PURPOSE: To provide participants with the necessary skills to:
- understand the intent of the Model Sewer Use By-Law
- collect samples and information to support industrial waste surveys, inspections and investigations
- obtain preserve transport and submit an acceptable sample

TARGET GROUP: Municipal Employees

SCOPE: Participants will have the opportunity to acquire the basic principles of:
- Selection of a suitable sample location
- Flow measurement
- Selection of sampling and monitoring equipment
- Selection of sample container and preservation method
- Calibration of sampling, monitoring and confined space atmospheric testing equipment installation and programing of automatic sampling equipment
- Sample transportation and handling
- Sample identification and chain of custody procedures
- Personal safety procedures related to sampling activities

FORMAT:
- Lectures
- Role Play
- Hands-on Practice

PRE-COURSE FAMILIARIZATION:
Model Sewer Use By-Law

CLASS SIZE: 24 people max.

DURATION:
Three days (8:15 to 4:30)

EVALUATION PROCESS:
- daily mini tests
- comprehensive final exam
- overall grade of 70% is required for successful completion of course

CEUs AWARDED:

COURSE DATES	APPLICATION DEADLINE	LOCATION
Oct. 15-18, 1990	Sept. 14, 1990	Central Ontario
Dec. 3-6, 1990	Nov. 2, 1990	Central Ontario
Mar. 25-28, 1991	Feb. 22, 1991	Central Ontario

INTRODUCTORY ENVIRONMENTAL NOISE

COURSE NUMBER: BYE120

PURPOSE: To increase the participant's on-the-job efficiency and familiarity with environmental noise problems and basic qualitative and quantitative methods of noise assessment.

TARGET GROUP: Municipal By-Law Officers whose responsibility is to investigate noise complaints under a Model Municipal Noise By-Law. MOE staff are expected to take ABT130 instead of this course.

PREREQUISITES: Desirably Grade 12 academic standing.

SCOPE: Participants will have the opportunity to learn:

- Basic Acoustics Concepts
- Introductory Environmental noise Theory
- Sound Level Measurements & Basic Instrumentation
- Introduction to Leg & other noise descriptors
- Measurement & Prediction of Traffic Noise
- Sound Level Adjustments
- Establishment of Noise Criteria
- Noise control By-Law Overview
- Investigation of Stationary Source Noise, Impact Industrial Noise & Blasting
- Noise Complaint Investigation Procedure
- Simple Sound Level Measurements & Traffic Noise Calculations

FORMAT:

- Lectures
- Field Trip
- Discussions
- Workshop Exercises

PRE-COURSE FAMILIARIZATION: Pre-course study material, including the Ministry manual, will be provided. Those attending should review and be familiar with format of the Model Municipal Noise Control By-Law

CLASS SIZE: 24 people max.

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:

- Graded workshop exercises and final exam
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Sept. 10-14, 1990	Aug. 10, 1990	Corporate Training Centre
Apr. 22-26, 1991	Mar. 22, 1991	Corporate Training Centre

ENVIRONMENTAL NOISE CERTIFICATE

COURSE NUMBER: BYE121

PURPOSE: To upgrade the participant's knowledge in noise investigations of simple nature.

TARGET GROUP: Municipal By-Law Officers whose responsibility is to investigate noise complaints and/or perform the duties of a Municipal Noise Control office. MOE staff are expected to take ABT130 instead of this course.

PREREQUISITES: Successful completion of the Introductory Environmental Noise Course, or prior documented formal training in acoustics subjects at the Introductory Course level

SCOPE: (PART I) Participants will have the opportunity to learn comprehensive principles of:

- Community Noise Characteristics & Automatic Noise Monitors
- Impulse Noise Measurements, Standards & Criteria
- Frequency Analysis of Noise, Tonality, Tape Recording
- Vibration Impact Analysis, Measurement 7 Criteria
- Blasting Noise & Vibration Impact Assessment, Measurements & Prediction Calculation
- Industrial & Commercial Noise Sources Impact Analysis, Advanced Procedures
- Noise & Vibration Abatement Techniques
- Noise Control By-Law (Comprehensive Option), Preparation & Implementation of a Noise By-Law
- Instrumentation Selection, Measurements, Complaint Investigation

FORMAT:

- Lectures
- Workshop Exercises
- Discussion
- Field Trip
- Case Studies
- Detailed Noise Investigation Reports

(PART II) Take Home Assignment Participants will have the opportunity to analyze selected problems in environmental acoustics on their own noise investigations. This part is compulsory for those wishing to receive a Certificate to fulfill duties of a Municipal Noise Control Officer.

PRE-COURSE FAMILIARIZATION: Pre-course study material, including the Ministry manual, will be provided. Those attending should be familiar with the format of the Model Municipal Noise Control By-Law, and should review basic procedures and guidelines from the noise By-Law document.

CLASS SIZE: 24 people max.

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:

- Graded workshop exercises and final examination
- Overall grade of 70% is required for workshop exercises and examination
- 85% grade is required for the take home assignment

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Oct. 1-5, 1990	Sept. 1, 1990	Corporate Training Centre
May 6-10, 1991	Apr. 1, 1991	Corporate Training Centre

MUNICIPAL CLASS EA PROCESS

COURSE NUMBER: APP210

PURPOSE: To increase the knowledge level and understanding of the Municipal Class EA Process.

TARGET GROUP: Planning, engineering and works staff of municipalities firms involved with undertakings and works subject to the Class Environmental Assessment process.

SCOPE:
- The purpose of the legislation
- The history of its development
- Overview of the EA process
- Details of the Class process
- Informal hearings, documentation, public consultation and other aspects

FORMAT:
- Lectures
- Case studies
- Discussions
- Exercises

PRE-COURSE FAMILIARIZATION: Participant will be provided with an information kit which should be reviewed prior to their attendance.

CLASS SIZE: 20 people

DURATION: Two days (8:30 to 4:30)

COURSE DATES	APPLICATION DEADLINE	LOCATION
To be announced.		

ENVIRONMENTAL NOISE IN LAND USE PLANNING

COURSE NUMBER: APP300

PURPOSE: To increase the participant's knowledge of how to carry out noise studies and prepare acoustical reports.

TARGET GROUP: Individuals responsible for the preparation, review and approval of new land use development including municipal and provincial planning and building department staff, urban planners, engineers, architects and developers.

SCOPE: Participants will have the opportunity to review relevant topics included in the Environmental Noise Certificate course and acquire extensive knowledge of:

- Land Use Planning Concepts & Procedures
- Planning Process in Ontario
- Analysis of Community Noise
- Sound Level Limits & Criteria
- Prediction of Road Traffic & Train Noise Levels
- Aircraft Noise Contours; Analysis of Noise Control Measures
- Prediction of Sound Barrier Attenuation
- Building Acoustics & Material
- Measurement of sound with Sound Level Meters
- Calculation Workshop
- Report Writing & Procedures

FORMAT:

- Lectures
- Workshop Exercises
- Discussions
- Field Trip

PRE-COURSE FAMILIARIZATION: Pre-course study material, including manuals will be provided. Candidates, who have not had suitable previous formal training are advised to review the relevant parts of the Introductory and Certificate Environmental Noise courses.

CLASS SIZE:

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:

- Final examination
- Overall grade of 70% is required for successful completion of the course

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
June 4-8, 1990	May 1, 1990	Brampton Training Centre
Nov. 5-9, 1990	Oct. 1, 1990	Brampton Training Centre
June 3-7, 1991	May 1, 1991	Brampton Training Centre

CONSTRUCTION OF SEWERS & WATERMAINS FOR INSPECTORS

COURSE NUMBER: TEC350

PURPOSE: To broaden the participant's understanding and knowledge of inspecting sewer and watermain construction projects.

TARGET GROUP: Individuals in the private or public sector whose responsibility is to inspect sewer and watermain construction projects.

PREREQUISITES: Candidates for this course should have a good basic understanding of sewer and watermain systems.

SCOPE: The course includes presentations on and discussions of the following topics:
- Basic Elements of Contract Documents
- Environmental Considerations
- Construction Layout
- Traffic Control
- Sewer Installation and Testing
- Sewer and Watermain Design Principles
- Construction Safety
- Excavation and Backfill
- Dewatering Methods
- Pipe Material and Installation
- Watermain Installation, Testing, Cleaning & Disinfection
- Soils in Construction
- Blasting Technique and Blasting Control
- Restoration
- Inspector's Duties and Records
- Tunnelling

FORMAT:
- Lectures
- Discussions
- Case Studies
- Displays

PRE-COURSE FAMILIARIZATION: Pre-course study material including calculations to be completed for classroom discussion will be provided. Personnel attending this course should be familiar with the Regulations in their own area.

CLASS SIZE:

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:
- Daily mini tests
- Comprehensive final examination
- Overall grade of 60% is required for successful completion of the course.

CEUs AWARDED: 3.0

COURSE DATES	APPLICATION DEADLINE	LOCATION
Mar. 18-22, 1991	Feb. 1, 1991	Nottawasaga Inn

NOTE: This course is developed and conducted jointly with the Ontario Municipal Engineers' Association.

SEWER DESIGN

COURSE NUMBER: TEC400

PURPOSE: To broaden the participant's understanding and knowledge of the design of Sewer systems.

TARGET GROUP: Personnel whose responsibility is to design sewer systems.

PREREQUISITES: Candidates for this course should have a good basic understanding of sewer design principles and should be employed, in the design of Sewer Systems.

SCOPE: Participants will have the opportunity to acquire comprehensive knowledge of:

- Project Procedures
- Physical Layout of Sewer Systems
- Storm Water Management
- Sewer Pipe Materials
- Hydrology in Urban Areas
- Sewer Design General
- Sewer Design Problem Calculations
- Design Considerations with Other Utilities
- Structural Aspects of Design
- Sewer Appurtenances & How Design Affects Maintenance
- Hydraulic Aspects of Design
- Problem Solving of Junction Manholes
- Hydrograph Techniques
- Major-Minor Concepts & Design

FORMAT:
- Lectures
- Discussions
- Displays

PRE-COURSE FAMILIARIZATION:
i) Review the lecture notes and other material mailed out for pre-course study
ii) Answer the pre-course study problems, which will be discussed during the course

CLASS SIZE:

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:
- No final examination
- Certification of completion of the course will be awarded

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Sept. 17-21, 1990	Aug. 1, 1990	Nottawasaga Inn

NOTE: This course is developed and conducted jointly with the Ontario Municipal Engineers' Association.

WATERMAIN DESIGN

COURSE NUMBER: TEC401

PURPOSE: To broaden the participant's understanding and knowledge of the design of watermain systems.

TARGET GROUP: Personnel whose responsibility is to design watermain systems.

PREREQUISITES: Candidates for this course should have a good basic understanding of watermain design principles and should be employed, in the design of Watermain Systems.

SCOPE: Participants will have the opportunity to acquire comprehensive knowledge of:

- Project Procedures
- Physical Layout of Watermain Systems
- Watermain Pipe Materials
- Sources of Water Supply
- Watermain Insulation
- Watermain Appurenanaces & Testing
- Water Valves
- How Design Afects Maintenance
- Design Considerations with other Utilities
- Estimating Water Demand
- Basic Hydraulics
- Design Problem Calculations
- Description of Loop Analysis
- Watermain Corrosion

FORMAT:

- Lectures
- Discussions
- Displays

PRE-COURSE FAMILIARIZATION:

i) Review the lecture notes and other material mailed out for pre-course study
ii) Answer the pre-course study problems, which will be discussed during the course

CLASS SIZE:

DURATION: Five days (8:15 to 4:30)

EVALUATION PROCESS:

- No final examination
- Certification of completion of the course will be awarded

CEUs AWARDED: 2.5

COURSE DATES	APPLICATION DEADLINE	LOCATION
Sept. 17-21, 1990	Aug. 1, 1990	Nottawasaga Inn

NOTE: This course is developed and conducted jointly with the Ontario Municipal Engineers Association.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